

Write your name here

Surname

Other names

Centre Number

Candidate Number

Edexcel GCSE

Physical Education

Unit 1: The Theory of Physical Education

Tuesday 24 May 2011 – Afternoon

Time: 1 hour 30 minutes

Paper Reference

5PE01/01

You do not need any other materials.

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided
– *there may be more space than you need.*

Information

- The total mark for this paper is 80.
- The marks for **each** question are shown in brackets
– *use this as a guide as to how much time to spend on each question.*
- Questions labelled with an **asterisk** (*) are ones where the quality of your written communication will be assessed
– *you should take particular care on these questions with your spelling, punctuation and grammar, as well as the clarity of expression.*

Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ►

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Answer ALL the questions.

For each part of question 1, choose an answer, A, B, C or D, and put a cross in the box ☒. Mark only one answer for each question. If you change your mind about an answer, put a line through the box ☒ and then mark your new answer with a cross ☒.

- 1 (a) Physical activity can improve your mental health by helping you 'feel good'. Which of the following causes this 'feel good' factor? (1)
- A An increase in testosterone
 - B An increase in serotonin
 - C An increase in blood pressure
 - D An increase in narcotic analgesics
- (b) There are many key influences that impact on our choice of physical activity. Which category of key influences do the following belong to: access, availability, time? (1)
- A Socio-economic
 - B Cultural
 - C Resources
 - D Health and wellbeing
- (c) As a result of adopting an active lifestyle an individual may improve aspects of health-related exercise. Which of the following is **not** an aspect of health-related exercise? (1)
- A Cardiovascular endurance
 - B Muscular strength
 - C Power
 - D Muscular endurance
- (d) Which of the following is a test of power? (1)
- A Sergeant Jump test
 - B Cooper's 12-minute run test
 - C 30-metre sprint test
 - D Harvard Step Test



(e) Planning what and when you eat is an important part of leading a healthy, active lifestyle. Which of the following would be the most appropriate amount of time to leave before exercising after a large meal? (1)

- A** No need to wait as the food will provide essential energy
- B** Five minutes
- C** Half an hour
- D** Two hours

(f) Which of the following performers would consider an 'ectomorph' somatotype to be the most appropriate body type for their activity? (1)

- A** Shot putter
- B** 400m runner
- C** 200m runner
- D** High jumper

(g) If an individual had high levels of low density lipoprotein (LDL 'bad' cholesterol), which of the following should he/she avoid in order to improve his/her health? (1)

- A** Foods high in unsaturated fats (e.g. sunflower oil, nuts)
- B** Foods high in soluble fibre
- C** Foods high in saturated fat (e.g. butter, crisps)
- D** Moderate exercise

(h) Which of the following is a long-term effect of participation in exercise and physical activity on the respiratory system? (1)

- A** Increase in blood flow to the lungs
- B** Increase in oxygen debt
- C** Increase in vital capacity
- D** Increase in breathing rate



- (i) Which one of the following muscles is contracting to allow the cyclist in **Figure 1** to flex his leg at the knee?

(1)



Figure 1

- A** Trapezius
- B** Hamstrings
- C** Gastrocnemius
- D** Quadriceps

- (j) In order for the gymnast to achieve and maintain the position in **Figure 2** he needs to have strong bones. Which of the following nutrients is essential in the diet for bone strength?

(1)



Figure 2

- A** Protein
- B** Vitamin C
- C** Carbohydrate
- D** Vitamin D

(Total for Question 1 = 10 marks)



2 Regular participation in physical activity is thought to be beneficial to the individual.

Explain how participation in physical activity can stimulate:

(a) Cooperation

(1)

(b) Competition

(1)

(c) Physical challenge

(2)

(Total for Question 2 = 4 marks)

3 Initiatives such as the Youth Sport Trust's TOP programme aim to contribute to the development of healthy, active lifestyles.

Briefly explain **two** ways that initiatives such as this can lead to a healthier, more active lifestyle.

1

2



(Total for Question 3 = 2 marks)



4 Fitness requirements vary for different activities. The performers in **Figures 3** and **4** need power, muscular endurance, strength and cardiovascular fitness for their activity, but the importance of each component varies depending on the activity.

In the table:

- identify the **two** most important components for each performer (select from: power, muscular endurance, strength and cardiovascular fitness) (4)
- explain how your **first** chosen component for each performer is used in his/her activity. (2)

| | | |
|---|--|--|
| |  <p>Figure 3 Long Distance Runner</p> |  <p>Figure 4 Sprinter</p> |
| Important component used by performer | Choice 1 | Choice 1 |
| Important component used by performer | Choice 2 | Choice 2 |
| How first chosen component (Choice 1) for each performer is used in his/her activity | | |

(Total for Question 4 = 6 marks)



5 As part of his Personal Exercise Programme (PEP) Joe measures his heart rate to check on his fitness levels.

(a) The heart rate monitors in **Figure 5** show three different heart rate values. Re-order these heart rate values and plot a graph to show Joe's resting, working and recovery heart rate.

(2)

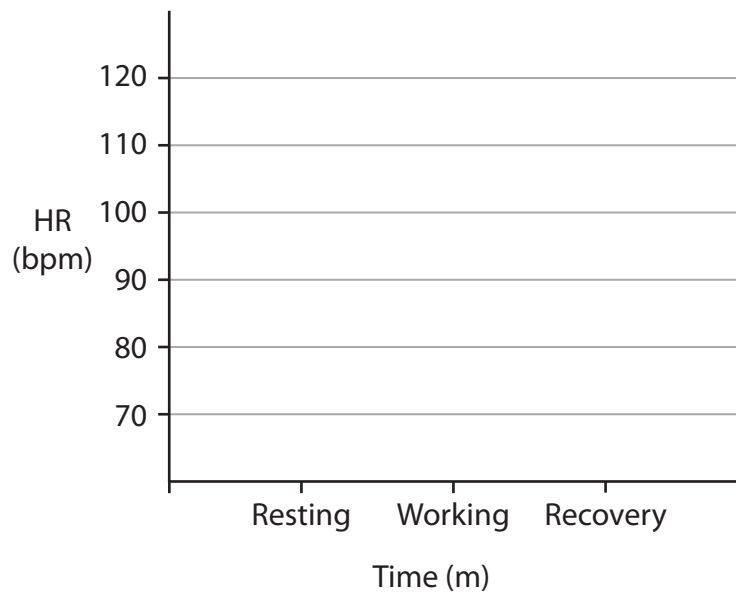


Figure 5

(b) Explain why you have plotted the values in this order.

I placed this value as working heart rate because

(1)

I placed this value as recovery heart rate because

(1)

(Total for Question 5 = 4 marks)



P 3 8 4 8 3 A 0 7 2 0

6 (a) Diet and rest are two important factors to consider when planning for a healthy, active lifestyle. How may diet and rest influence personal health?

(i) Diet

(1)

(ii) Rest

(1)

(b) Why do you need to consider what you eat if you exercise regularly?

(1)

(Total for Question 6 = 3 marks)



- 7 (a) Identify **two** different types of injury the player in **Figure 6** could sustain as a result of the ball striking his face.

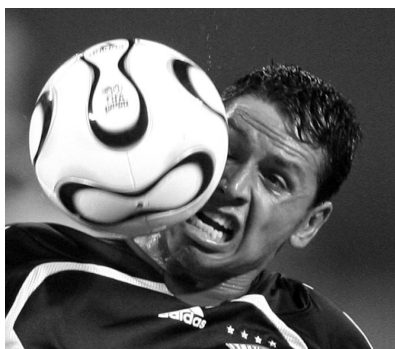


Figure 6

Injury 1

(1)

Injury 2

(1)

-
- (b) Some injuries are described as soft tissue injuries. What would be the appropriate treatment for these types of injury?

(1)



(c) Different measures are put in place to reduce the risk of injury in physical activity.

Give three **different types** of examples to demonstrate how risk of injury is reduced in an activity of your choice.

(3)

Chosen activity

Risk reduced by:

1

Risk reduced by:

2

Risk reduced by:

3

(Total for Question 7 = 6 marks)



8 Several different categories of performance enhancing drugs are listed in the table below.

| | | |
|---------------------|---------------|----------------------|
| Anabolic steroids | Beta blockers | Diuretics |
| Narcotic analgesics | Stimulants | Peptide hormones/EPO |

(a) Using this information, identify the relevant category of drug referred to in each of the following statements.

(i) Long distance runners are more likely to use this class of drug than sprinters. (1)

(ii) Weight lifters may use this class of drug to mask the pain of a torn muscle. (1)

(iii) Archers may use this class of drug because of its calming effect to improve their accuracy. (1)

(iv) Some performers will use this class of drug to mask the use of other types of drugs. (1)

(b) All of these drugs have potentially harmful side effects. Explain why, despite the risks, some performers will still use them. (1)

(c) Give an example of a possible harmful side effect of diuretics. (1)

(Total for Question 8 = 6 marks)



9 Although not illegal, smoking can have dangerous side effects on the body.

(a) In the table:

- name the **two** body systems that can be seriously damaged by cigarette smoke (2)

- state a health risk associated with smoking for each of these systems. (2)

| Body system damaged by smoking | Health risk associated with smoking for this system |
|--------------------------------|---|
| | |
| | |

(b) Apart from the obvious health risks, why are sports performers advised not to smoke? (1)

.....

.....

(Total for Question 9 = 5 marks)

10 An oxygen debt can occur when working hard during physical activity. Explain the term 'oxygen debt'.

.....

.....

.....

.....

(Total for Question 10 = 3 marks)



11 The skeletal system has a very important role to play in allowing us to lead a healthy, active lifestyle. Give **two** examples to demonstrate how the role of the skeleton helps us to be active.

1

2

(Total for Question 11 = 2 marks)

12 **Figure 7** shows two basketball players. One player has flexed his arm at the elbow to control the ball. His opponent has moved his extended arm away from the mid-line of the body to try to intercept the next pass.



Figure 7

(a) Name the muscle that contracts in order to flex the arm at the elbow.

(1)

(b) Name the joint action occurring at the shoulder as the arm moves away from the mid-line of the body.

(1)

(Total for Question 12 = 2 marks)



13 Rob and Imran regularly participate in physical activity.

(a) Rob takes part in cross-country runs on a regular basis. State a possible physical benefit of taking part in cross-country.

(1)

(b) Rob regularly represents his school in cross-country and runs for his county in inter-county championships. What stage of the sports participation pyramid will Rob have achieved?

(1)

(c) Imran plays for the school football team. At the start of the season the team undergo a series of fitness tests. In the table below:

- tick the most relevant fitness test for a football player (not goalkeeper)

(1)

- explain why this fitness test is relevant to Imran.

(1)

| | Tick most relevant fitness test for football player | Explanation why this fitness test is relevant to football player |
|-------------------------|---|--|
| Illinois Agility Run | | |
| Hand grip strength test | | |
| Standing Stork test | | |

(d) Rob and Imran make sure their training matches the needs of their activity. Which principle of training does this relate to?

(1)



(e) Some training methods can be adapted to suit different activities. In the table below:

- name a training method that Rob and Imran could both use for their activity (1)
- explain how each boy would adapt this training method to suit his own activity. (2)

| Training method that can be used by both boys | How training method would be adapted by Rob (Cross-country runner) | How training method would be adapted by Imran (Footballer) |
|---|--|--|
| | | |

(f) Both activities require the boys to work aerobically and anaerobically. For each of the following statements, state whether the activity is aerobic or anaerobic.

(i) Rob kept a steady pace for the first mile and a half of the race. (1)

(ii) At one point near the end of the race Rob had to sprint to prevent the runner behind overtaking him and going into the lead. (1)

(iii) During the fifth minute of the game Imran had a chance to score a goal, he struck the ball hard and gave his team an early lead. (1)

(iv) In the second half of the game Imran spent a lot of time slowly jogging back into position. (1)



(g) Both boys were encouraged by their teachers to set SMART targets to help them improve their performance in their activities.

(i) Give **two** reasons why target setting could help improve performance.

(2)

Reason 1

Reason 2

(ii) Give an example of a measureable target for Rob.

(1)

(Total for Question 13 = 15 marks)



(Total for Question 14 = 6 marks)

*15 A healthy, active lifestyle will have an impact on the body systems. Describe some of the effects of participation on the body's cardiovascular and muscular systems.

In your answer you may consider:

- the immediate and short-term effects of participation on each system
- the effects of regular participation and long-term effects on each system.



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